

DECLARATION OF DR. JONATHAN LOUIS GOLOB

I, Jonathan Louis Golob, declare as follows:

1. I am an Assistant Professor at the University of Michigan School of Medicine in Ann Arbor, Michigan, where I am a specialist in infectious diseases and internal medicine. At the University of Michigan School of Medicine, I am a practicing physician and a laboratory-based scientist. My primary subspecialization is for infections in immunocompromised patients, and my recent scientific publications focus on how microbes affect immunocompromised people. I obtained my medical degree and completed my residency at the University of Washington School of Medicine in Seattle, Washington, and also completed a Fellowship in Internal Medicine Infectious Disease at the University of Washington. I am actively involved in the planning and care for patients with COVID-19. Attached as Exhibit A is a copy of my curriculum vitae.
2. COVID-19 is a novel zoonotic coronavirus that has been identified as the cause of a viral outbreak that originated in Wuhan, China in December 2019. The World Health Organization has declared that COVID-19 is causing a pandemic. As of March 12, 2020, there are over 140,000 confirmed cases of COVID-19. COVID-19 has caused over 5,000 deaths, with exponentially growing outbreaks occurring at multiple sites worldwide, including within the United States.
3. COVID-19 makes certain populations of people severely ill. People over the age of fifty are at higher risk, with those over 70 at serious risk. As the Center for Disease Control and Prevention has advised, certain medical conditions increase the risk of serious COVID-19 for people of any age. These medical conditions include: those with lung disease, heart disease, diabetes, or immunocompromised (such as from cancer, HIV, autoimmune diseases), blood disorders (including sickle cell disease), chronic liver or kidney disease, inherited metabolic disorders, stroke, developmental delay, or pregnancy.
4. For all people, even in advanced countries with very effective health care systems such as the Republic of Korea, the case fatality rate of this infection is about ten fold higher than that observed from a severe seasonal influenza. In the more vulnerable groups, both the need for care, including intensive care, and death is much higher than we observe from influenza infection: In the highest risk populations, the case fatality rate is about 15%. For high risk patients who do not die from COVID-19, a prolonged recovery is expected to be required, including the need for extensive rehabilitation for profound deconditioning, loss of digits, neurologic damage, and loss of respiratory capacity that can be expected from such a severe illness.

5. In most people, the virus causes fever, cough, and shortness of breath. In high-risk individuals as noted above, this shortness of breath can often be severe. Even in younger and healthier people, infection of this virus requires supportive care, which includes supplemental oxygen, positive pressure ventilation, and in extreme cases, extracorporeal mechanical oxygenation.
6. Most people in the higher risk categories will require more advanced support: positive pressure ventilation, and in extreme cases, extracorporeal mechanical oxygenation. Such care requires highly specialized equipment in limited supply as well as an entire team of care providers, including but not limited to 1:1 or 1:2 nurse to patient ratios, respiratory therapists and intensive care physicians. This level of support can quickly exceed local health care resources.
7. The COVID-19 virus can severely damage the lung tissue, requiring an extensive period of rehabilitation and in some cases a permanent loss of respiratory capacity. The virus also seems to target the heart muscle itself, causing a medical condition called myocarditis, or inflammation of the heart muscle. Myocarditis can affect the heart muscle and electrical system, which reduces the heart's ability to pump, leading to rapid or abnormal heart rhythms in the short term, and heart failure that limits exercise tolerance and the ability to work lifelong. There is emerging evidence that the virus can trigger an over-response by the immune system in infected people, further damaging tissues. This cytokine release syndrome can result in widespread damage to other organs, including permanent injury to the kidneys (leading to dialysis dependence) and neurologic injury.
8. There is no vaccine for this infection. Unlike influenza, there is no known effective antiviral medication to prevent or treat infection from COVID-19. Experimental therapies are being attempted. The only known effective measures to reduce the risk for a vulnerable person from injury or death from COVID-19 are to prevent individuals from being infected with the COVID-19 virus. Social distancing, or remaining physically separated from known or potentially infected individuals, and hygiene, including washing with soap and water, are the only known effective measures for protecting vulnerable communities from COVID-19.
9. COVID-19 is known to be spreading in the Seattle, Washington-area community. As of March 11, 2020 there are 270 confirmed cases of COVID-19 (an increase of 36 from March 10, 2020) and twenty-seven deaths from COVID-19 in the Seattle area. This

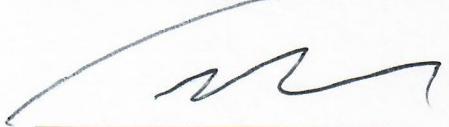
represents the largest known outbreak in the United States, and one the largest known outbreaks in the world as of March 12, 2020.

10. Nationally, without effective public health interventions, CDC projections indicate about 200 million people in the United States could be infected over the course of the epidemic, with as many as 1.5 million deaths in the most severe projections. Effective public health measures, including social distancing and hygiene for vulnerable populations, could reduce these numbers.
11. Based on the recovered genomes of the virus from the community analyzed by the Nextstrain project run by Dr. Trevor Bedford of the Fred Hutchinson Cancer Research Center in Seattle, it is known that the infection is being shared from person to person in and around Seattle. COVID-19 strains have specifically traced infection between residents and staff members of a skilled nursing facility in the Seattle area. This evidence suggests that COVID-19 is capable of spreading rapidly in institutionalized settings. The highest known person-to-person transmission rates for COVID-19 are in a skilled nursing facility in Kirkland, Washington and on afflicted cruise ships in Japan and off the coast of California. The strain of virus spreading in the Seattle area is genetically related to the strain of virus that spread readily on the cruise ships.
12. The COVID-19 outbreak in Seattle has resulted in the need for unprecedented public health measures, including multiple efforts to facilitate and enforce social distancing. These include encouraging employees to work from home, bans of gathering of more than 250 people, closure of schools, closure of the University of Washington campus in Seattle, limitations of visitation to skilled nursing facilities, and cancellation of major public events. Individuals have been asked to delay or cancel health care procedures in order to free up capacity within the system.
13. During the H1N1 influenza (“Swine Flu”) epidemic in 2009, jails and prisons were sites of severe outbreaks of viral infection. Given the avid spread of COVID-19 in skilled nursing facilities and cruise ships, it is reasonable to expect COVID-19 will also readily spread in detention centers, particularly when residents cannot engage in proper hygiene and isolate themselves from infected residents or staff.
14. This information provides many reasons to conclude that vulnerable people, people over the age of 50 and people of any age with lung disease, heart disease, diabetes, or immunocompromised (such as from cancer, HIV, autoimmune diseases), blood disorders (including sickle cell disease), chronic liver or kidney disease, inherited metabolic disorders, stroke, developmental delay, or pregnancy living in an institutional setting,

such as an immigration detention center, with limited access to adequate hygiene facilities and exposure to potentially infected individuals from the community are at grave risk of severe illness and death from COVID-19.

Pursuant to 28 U.S.C. 1746, I declare under penalty of perjury that the foregoing is true and correct.

Executed this 13th day in March, 2020 in Ann Arbor, Michigan.



Dr. Jonathan Louis Golob